REMARKS

Claims 112 and 14-20 are pending. Claims 1-12 and 15 are in condition for allowance. Claims 12 and 16 are amended for grammatical correction. Claim 14 is cancelled. Claims 16, 17 and 19 are amended for clarity. The amendments are supported by the claims and specification as originally filed.

Applicants thank Examiner Bissett for the indicated allowability of the subject matter of claims 1-12 and 15, and consideration and acknowledgement of the Information Disclosure Statement and Form PTO-1449 filed May 22, 2003.

Applicants file herewith an Information Disclosure Statement and form PTO 1449 for consideration and acknowledgement by the Examiner as the reference may pertain to one or more pending claims.

Claim 14 have been objected to under 37 C.F.R. §1.75(c) as being of improper dependent form. Applicants herein cancel claim 14 without prejudice to or disclaimer of the subject matter therein.

Claims 16-20 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Zyomyx, Inc., WO 00/04382 ("Zyomyx"), in view of Marks et al., U.S. Patent 5,977,322. It is asserted in the Final Office Action of December 1, 2003, that Zyomyx discloses protein arrays comprising a substrate, an organic thin film, and proteins immobilized on the thin film (p. 5 lines 6-12), wherein the substrates may be coated before the addition of the organic thin film (p. 19 lines 20-29). The organic thin film is preferably a monolayer having the formula X-R-Y that, according to the Final Office Action, corresponds with applicants' trifunctional compound (p. 22 lines 8-20). The functional group X interacts with the substrate or coated substrate by chemical or physical means (p. 26 lines 14-22), while functional group Y interacts with a protein by covalent or non-covalent linkage (p. 28 line 9-p. 29 line 9). It is admitted in the Final Office Action that Zyomyx does not teach gelatin as a coating substance for the substrate. Marks teaches protein assays using coated substrates, teaching the conventionality of coating gelatin on substrates to reduce non-specific binding (col. 32 line 59-col. 33 line 5; col. 33 lines 39-43). Because Zyomyx is also concerned with non-specific binding (p. 12 lines 17-19), it is asserted in the Final Office Action that it would have been prima facie obvious to include a gelatin on Zyomyx' substrate to reduce non-specific binding, simplify covalent conjugation, and enhance signal

detection. For at least the following reasons, the rejection is respectfully traversed.

Zyomyx discloses a protein array including a substrate on which an organic thinfilm is coated, and a plurality of patches is formed on known regions of the organic thinfilm (page 15, lines 12-16, and Figs. 1, 2, 4, and 5). The organic thinfilm is a monolayer of protein conjugation reagents having formula X-R-Y, wherein X is a functional group binding to the surface of the substrate, Y is a functional group for binding proteins onto the monolayer, and R is a linker. *See* page 22, lines 8-11. As admitted in the Final Office Action, Zyomyx does not teach gelatin as a coating substance for the substrate.

Mark et al. is directed to a class of novel antibodies and use of such antibodies in an immunoassay. It is well known to practitioners performing immunoassays to treat the surface, after immobilization of antibodies, with a solution of protein, e.g. BSA, or gelatin, to reduce non-specific binding. Mark et al. repeats this teaching. Mark et al. does not teach how to use gelatin to prepare a protein array, or how to incorporate protein conjugation reagents into a gelatin coating to immobilize a protein.

There is no motivation to combine the references to achieve the claimed invention. Even if one skilled in the art were to look to Mark et al. for a teaching of gelatin usage in immunoassays, the method of making a gelatin layer including a protein conjugation reagent is not disclosed or suggested. Further, Zyomyx discloses that the protein conjugation reagents X-R-Y form a monolayer, and therefore do not require placement in any coating material. Thus, there is no motivation from either reference to combine the teachings of the references. Even if combined, the references suggest two layers: a gelatin layer and a distinct monolayer containing the protein conjugation reagents.

Even if the teachings were combined so as to teach a single layer, one skilled in the art would not achieve the claimed invention. The claimed invention includes a substrate on which a layer of gelatin is coated. A trifunctional group A-L-B is affixed in the gelatin layer, wherein A-L-B comprises a linker L, and functional groups A and B, wherein A and B are each capable of interacting with a protein capture agent and gelatin. *See* page 4, lines 20-24, of the specification. The trifunctional group can be oriented in any manner in the

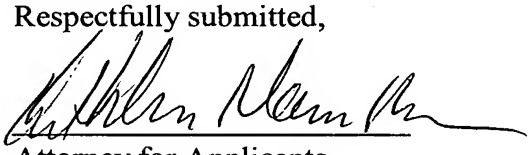
gelatin because both A and B can react with both the gelatin and a desired protein capture agent. Thus, random orientation of the trifunctional group occurs in the gelatin of the invention.

In contrast, Zyomyx requires the protein conjugation reagents X-R-Y to form a monolayer wherein X is affixed to a substrate, and Y is free to bind proteins. Mark et al. does not disclose or suggest placement of a trifunctional group in a gelatin coating on a substrate. If the references were combined to form a single layer comprising both gelatin and the protein conjugation reagents, the protein conjugation reagents X-R-Y would be oriented with X affixed to a substrate, and Y extending into or through the gelatin layer. Thus, the references, alone or in combination, do not disclose or suggest the subject matter of the claimed invention. Reconsideration and withdrawal of the rejection are in order.

Applicants submit that all of claims 1-12 and 15-20 are in condition for allowance for at least the reasons set forth herein. Prompt and favorable action is earnestly solicited.

Should the Examiner require anything further, or have any questions, the Examiner is invited to contact Applicants' undersigned representative.

Respectfully submitted,



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